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An Address
Before the National Education Association
of the United States
At Denver, Colorado, July 7, 1909

BY
JAMES W. ROBERTSON, D.Sc., LL.D., C.M.G.
Principal of Macdonald College,
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JAMES W. ROBERTSON, PRINCIPAL OF MACDONALD COLLEGE, STE. ANNE
DE BELLEVUE, QUEBEC, CANADA

For the whole country as a matter of protection, safety, and insurance, it behooves us to look well to the training of the young people toward rural life, and to look well to the training of leaders for them. The Macdonald movement, as helped by Sir William C. Macdonald, has nothing destructive in it. It does not desire to destroy anything that now exists in rural districts, except weeds, but it hopes to help in building up something better than is now known and done, and thereby displace what is poor. It aims at helping the rural population to understand better what education is and what it aims at for them and their children. It plans to help in providing more competent leaders for the horticultural and agricultural population. Somebody's watchfulness, somebody's thoughtfulness, and somebody's thoroughness are always required; and the progress of the people in all worthy ways can be increased in what might be called geometric ratio thru intelligent leaders who possess and use such qualities with unselfish public spirit.

At that time, in 1898-99, in fact before that, Sir William C. Macdonald had been most anxious to help to improve rural schools in Canada, and he came to me for some help in the way of plan-making and administration. I said that, in my judgment, the first thing to do was to give object-lessons of manual training in the elementary schools of cities and towns so as to educate public opinion in favor of better methods of education in places where newspapers were published and to which the country people looked for guidance. He rather demurred, saying that the city and town schools were already too good in comparison with the country schools, and tended to draw people in from the country to the towns in order to get education for their children. Afterward when he saw it would be a means of helping the rural schools he said, "All right, we will carry on the manual training in some town schools." The man in the rural district imitates the man who lives in town. The man who lives in town has the best chance of being a leader; and the man in the country would not be willing to take a lower grade of education for his boy than a town or city man. It was important to get the leaders from the city to recognize improvement by means of practical education. This was the reason for the Macdonald Manual Training Fund and its work. Manual training was the first step in this plan. The rural school was not an afterthought; it did not come out of the manual-training movement. The manual-training movement was a step toward the other end—that of improving the rural schools. Hitherto the wealth and wisdom of the country have been given to town schools. The little rural school has been left without help.

Sir William C. Macdonald furnished funds to establish manual-training centers in connection with the public schools in twenty-one places, from Prince Edward Island to British Columbia, and to maintain them without cost

to the pupils or the public for a period, in most cases, of three years. At first special teachers of ability and experience were brought in from outside, mostly from England. Some twenty-seven manual-training teachers were thus brought into Canada. As time went on Canadian teachers were trained and became duly qualified. Before the end of the period of maintenance by the Macdonald fund, there were forty-five manual-training teachers on the salary roll at a cost of some \$3,600 per month, and more than 7,000 boys were taking the courses. Summer courses were provided for teachers of urban and rural schools. In the cities on Saturday forenoons, or at some other convenient time every week, classes were arranged for the teachers from whose rooms the boys went to the manual-training centers. In Ottawa these classes were attended by over ninety teachers, and in Montreal and in Toronto by over a hundred in each place. This work was begun seven years ago and in 1903 (in Montreal in 1904) the local authorities in the several provinces took over and extended the work. The equipment was presented free to the school boards, and in the case of the normal schools to the provincial governments. Now over 20,000 boys and girls in Canadian schools receive the benefits of manual training in their regular course under the school authorities as a result of Sir William's benefaction in giving that form of industrial and agricultural education a good friendly lift.

SEED GRAIN PRIZES

Out of the Macdonald Manual Training Fund came the Macdonald Seed Grain Competition carried on by boys on farms dotted all over Canada from the Atlantic to the Pacific. The main purpose of this movement was to improve the crops of Canada by encouraging the general use of seed improved by selection from varieties of which the product is in demand or has a relatively high market value. The use of such seed increases the quantity of produce per acre; makes the quality better, and thus renders rural occupations more profitable and the people who follow them more prosperous and more contented. I went to my friend, William C. Macdonald, of Montreal, and said in substance: "Here is a great chance to do some educational work in progressive agriculture; to do something interesting, something attractive, something definite, something beneficial to the whole community, something easy and yet with plenty of difficulties. Farmers and their families may fail to appreciate the educational advantages of a plan or scheme set out in a written statement, but here is something which would be so helpful and instructive to boys and girls that they would go on with it, and the habits of observation and thought and study would go on with them." I told him \$10,000 for prizes would set and keep this thing going for three years. He provided the money with all good-will—my little \$100 come back a hundred fold—to offer as prizes to boys and girls to encourage them to carry out in practice the plan of selecting the largest heads of the most vigorous plants and growing seed from those heads on a plot by itself.

The yields from the crops of 1900 compared with those of 1903, on an average for all Canada for spring wheat, showed an increase of 18 per cent. in the number of grains per hundred heads, and 28 per cent. of increase in the weight of grains per hundred heads. In oats the figures were 19 per cent. of increase in the number of grains per hundred heads, and 27 per cent. of increase in the weight of grains per hundred heads. These are results from several hundred seed grain plots operated by boys and girls. Altogether over 1,500 entries were received. Out of that number 800 completed in full the first year's work, and 450 of them completed the three years' work in a satisfactory manner.

CANADIAN SEED GROWERS' ASSOCIATION

Many of the farmers on whose farms the competition was carried on were formed into the Macdonald-Robertson Seed Growers' Association, out of which grew the Canadian Seed Growers' Association. Its third annual meeting was held in June, 1906, and the report of its proceedings contained a marvelous record of valuable public service. Particular information was obtained from leading members of the association. These reported several distinct and definite gains from the method of selection which had been followed by the members of the association—namely: the size and quality of the kernels definitely improved; the strains of selected seed maturing more evenly; the strains becoming better adapted to local conditions; varieties being kept pure; the strains becoming more resistant to disease and gaining in productiveness. All these are highly desirable and give added value to the crops in every case.

I made inquiries last year from the Seed Branch of the Department of Agriculture and from members of the Canadian Seed Growers' Association. I gathered from their estimates that one of the direct results from the seed grain competition was an increase in the value of the grain crops on the relatively few farms as yet following the selecting practice to the extent of at least \$500,000. That is high finance for you. High finance by a man of lofty intelligence and spirit—5,000 per cent. on an investment of \$10,000, and the best of it all is that Sir William Macdonald has not sought and did not receive a single dollar of return for himself from it. That is laying up treasures where neither moth nor rust doth corrupt and which goes on gathering and diffusing benefits for ever and for ever for the people.

SCHOOL GARDENS

Under the Macdonald Rural School Fund, arrangements were made for providing a school garden at each of five rural schools in each of five provinces. A trained instructor was placed in charge of each group of five gardens and of the nature-study work at them. He spent one day at one school and the next at another. The cost of this was met by Sir William Macdonald.

At the school gardens an effort is being made to give the children information and training in three important matters in connection with agriculture:

the selection of seed; the rotation of crops; and the protection of crops against weeds, disease, and insects. It is really industrial education. Children find out something by doing, observing, and recording the results themselves, and I say it over again that all worthy progress, in matters that are worth thinking about, springs from learning the lessons of consequences. As soon as a child understands that, and governs his life accordingly, he becomes a better pupil and the promise of a better citizen in every sense.

The school garden is one way of making rural life more popular as well as efficient. It may be the first step toward actuating the people to pay more to make the schools more efficient. The best education in rural schools should make the people like rural life and also enable them to make it more profitable. The best way to make any workman like his work is to make him understand it. The beginnings of all that and much more are laid in the schools.

In the largest school, two hours' work per week by the pupils was found requisite to keep the gardens in proper condition. In one school the enthusiasm was so great that the pupils did all their garden work outside the regular school hours. At this school, also, the garden did not suffer from neglect in the slightest degree during the midsummer vacation of six weeks. Experience indicates that when the gardens are fully organized the plots can be well kept by devoting two half-hours per week to the work. This time is mentioned, not as the ideal condition, but as an encouragement to those who may desire to start school gardens in districts where prejudices are likely to be met. The fact is that in the ordinary ungraded school, and for that matter in the urban school as well, the working power of the pupils is ill-sustained throughout the day owing to their merely forced interest in much of the prescribed work. An awakening as to the educational waste of our schools is coming, and when the school garden is seen in its true relation, it will have a period in each day of the school program during the growing season. The children have ample time to spare, and the work of the gardens is promoting their intelligence and progress in the ordinary school course.

Mr. E. A. Howes, who is now principal of the Macdonald Consolidated School at Guelph, Ontario, had charge of the school garden nearest the city of Ottawa. I venture to include the following extracts from an article by him:

Bowesville, Ontario, which is situated six miles south of the Dominion capital, has long been regarded as one of the most progressive sections in the progressive county of Carleton, and it is to the active interest of its people in the welfare of their school that the credit for a large measure of the success of the movement here is due. They have never interfered but to aid. Land sufficient to make a school ground comprising two and one-half acres was purchased, and this was enclosed by a neat fence with turned posts and attractive gates.

The daily attendance at Bowesville school may be placed at approximately fifty children, ranging from six to sixteen. The plan of dual ownership of garden plots has been followed here, a senior and junior pupil having joint ownership in a piece of ground (ten feet by twenty feet), working in conjunction and making a just division of the spoils at time of harvest. This plan gets over the difficulty experienced when juniors are shouldered

with the entire responsibility of managing a plot, while it does not destroy the sense of ownership which makes proud the juvenile gardener. In laying out and cultivating the garden plots the entire work, with the exception of the ploughing of the ground, was performed by the children and, it may be added, cheerfully performed. Neighboring farmers brought manure for the garden and ploughed the ground.

The experimental plots, belonging to the senior class, deserve special notice. Experiments in crop rotation, in the effect of clover growth, and in potato spraying have been carried on and results carefully noted. Bowesville is the center of the largest potato producing section in eastern Canada, so particular attention was paid to potato spraying experiments. In addition to the class experimental plots mentioned, three of the oldest pupils carried on an independent experiment in spraying. Care was taken that the crop received neither more nor less attention, other than the spraying, than did the crop in a neighboring field. Rows of potatoes sprayed with Bordeaux mixture were grown beside rows receiving ordinary attention. When the resulting crops were piled side by side in the toolhouse, showing an increase equivalent to more than fifty bushels per acre for the sprayed over the unsprayed crops, and also a decided improvement in size and quality, the farmers sat up and did more thinking than would have been the case had they read of the same results in some agricultural publication. It is not so much what these plots teach as it is the trend of thought induced.

The following extracts are from letters and reports received from teachers in charge of school gardens, Carleton County, Ontario:

The school garden seems to fill in the weak parts of our education for the growing child, as it tends to the molding and developing of his character. I know that the general discipline in my room has been helped by the garden work and also that the pupils like their work in the schoolroom better on account of it. If our politicians would try teaching school with a garden and then without one for two years, as I have done, I am certain that they would be willing to grant all the financial support required; yes, probably be too liberal with it.

(Miss) M. YORK

Richmond Public School

My pupils are more observant than they were before we started school garden work, and seem to acquire a clearer understanding of all their work. Mr. A—— told me that the school garden had been a benefit to his boys, and that they were more independent in their work both in school and out of school.

W. PETTAPIECE

Principal North Gower Public School

I am ready to put myself on record as saying that the school garden has relieved much of the drudgery of the school work to which I was always accustomed. This year we had our school garden and it has been the pleasantest year of my school work. I would never again pass a summer without a school garden. I consider that the chief value of the school garden lies in the effect which it produces on the moral tone of the school. The juvenile sense of ownership is the greatest insurance on the success of the garden and incidentally on the care of the whole school property. The garden is the central point of interest for this end of the township, and it is not unusual to have as many as a hundred visitors at the garden on one Sunday afternoon. I have noticed that the cultivation of flowers has received more attention in the homes since the advent of the school garden, and I am often consulted about this work. I have not heard any unfavorable opinion expressed by responsible persons in this community, but on the other hand the most progressive men have spoken highly of the garden work.

B. A. HOWES

Macdonald Consolidated School, Guelph
(Late of Bowesville Public School)

It is impossible to overestimate the value of school gardening on our boys and girls. Instead of being detrimental (as at first supposed) to their advancement in the other branches of learning, it has had the opposite effect. Since engaging in the work my boys and girls have been first in all examinations, competing with children from other schools, including city schools. The whole tone of the school has been improved morally, socially, and esthetically. Our boys and girls have now a reverence for life unknown before, and it has awakened in them, as nothing else could do, a deeper interest in all life around them. It has helped to make school life a pleasure. Now the boy makes the excuse to get to come to school instead of the excuse to remain at home. It has aroused the interest of the entire community. The parents take a pride in "the work of our boys and girls in the school gardens," and never fail to bring visitors to see the work that is being done there. The pupils learn practical gardening, and already their advice and assistance are often sought by parents and others interested in the cultivation of plants. Its influence is seen also in the plots and flower borders outside. Our school board has come to realize the value of this work and are anxious to have it continued.

G. A. MOORE

Principal Carp Public School

CONSOLIDATED RURAL SCHOOLS

Four object-lesson consolidated rural schools were provided by the Macdonald Rural School Fund—one in each of the four provinces of Ontario, New Brunswick, Nova Scotia, and Prince Edward Island.

They were located at places chosen or approved by the Provincial Departments of Education. In each case a new building was erected to take the place of the small schools which at that time were serving the single sections proposed to be consolidated. They were each equipped with ordinary classrooms and an assembly hall, and also for manual training, household science, and nature study with a school garden.

A consolidated school board was elected according to the school law of the province concerned. The school in Nova Scotia was opened in September, 1903; in New Brunswick, September, 1904; in Ontario, November, 1904, and in Prince Edward Island, early in the summer of 1905.

The Macdonald Rural School Fund meets for a period of three years the additional expense of the consolidated school over the cost of the small rural schools which formerly served the locality. The school sections contributed exactly the amount of the former expenditure, and the extra cost is met by the Macdonald fund for three years to enable the people of four provinces to have these object-lessons and experiments in education.

The educational results from these schools have been entirely satisfactory to the authorities, to the teachers, and especially to the parents and children. The average daily attendance at the consolidated schools was on the whole over 55 per cent. higher than the average daily attendance at all of the schools which formerly served the localities; at Kingston, N. B., it was over 140 per cent. higher.

The attractiveness of the consolidated schools becomes in itself a form of compulsory education—the interest of the children being the power which secures regular attendance. A great point has been gained when love of the school and love of education there set the pace for progress.

One of the gratifying results is the large number of boys and girls, young men and young women, from rural homes, who are doing advanced or high-school work. At one of these schools there were about 100 pupils in the high-school grades. Many of these are preparing to be teachers in rural schools. When teachers, who themselves have been educated in consolidated rural schools, with nature study, household science, and manual training, teach in single rural schools they will make the influence of their own training tell thruout many of the one-room schools.

THE MACDONALD INSTITUTE

Notable results have followed in several of the provinces from these object-lessons—consolidated rural schools. Dr. MacKay, superintendent of education in the province of Nova Scotia, writes that in his province 53 schools have been consolidated into 22 effective ones. In the province of New Brunswick there are four large consolidated schools, each with nature study and school garden, manual training and household science. The provincial government pays half the cost of conveying the children and gives other special grants.

Sir Willam Macdonald gave the sum of \$182,500 to provide buildings and equipment at the Ontario Agricultural College, Guelph, to train teachers now in the service for this "new education." Besides serving that purpose the institute has become a headquarters for manual training, for household science, and for providing short courses of instruction and training for farmers' daughters and others in cooking, sewing, domestic art, and other branches of domestic economy. Two buildings were erected. Short courses of instruction in nature study and school gardens were provided without fees to teachers. The governments of four eastern provinces where the consolidated schools were established gave scholarships to enable teachers to attend. Over 200 teachers have already taken these courses. When pupils who pass thru consolidated rural schools go on thru the normal schools, each with advanced work and suitable professional courses in manual training, nature study, and household science, they will be thoroly qualified to carry on this better system of education.

MACDONALD COLLEGE

Macdonald College has grown out of Sir William Macdonald's keen desire to help the rural population to build up the country and to make the most of it and themselves. In some measure it grew out of the school garden movement and the consolidated schools, to serve as a headquarters for the training of leaders. In some measure it grew out of the manual-training movement, which is a first necessity in the general education of pupils if they are to profit by technical and industrial education afterwards. In some measure it grew out of the oft-expressed desire on the part of the educational leaders over the whole Dominion for such advancement and improvement of education for rural communities as would not only prepare the children for life at its best in

rural occupations, but would also satisfy the people as being the right training for their children.

We are standing at Macdonald College for research work and for illustration work in three of the important matters in agriculture: the use of selected seed on suitably prepared ground; the proper rotation of crops (which is hardly understood and certainly is not practiced in the eastern part of Canada, excepting in parts of Ontario); and the protection of the crop against weeds, insects, and diseases. Each one of these three might increase the average yield as much as 25 per cent. within ten years wherever put into intelligent, careful practice. Our policy at Macdonald College is not merely to have research work along these lines, but to give illustrations along these lines wherever our students go, and we hope by and by to make every graduate of our college a leader to carry out this system of farming on his farm under college direction. He shall have selected seed (if need be, furnished by the college) grown on suitably prepared soil; he shall follow a rotation of crops properly adapted to his locality; and he shall be capable of fighting the weeds, insects, and diseases. Such illustrations on his farm will be a beacon light to the whole locality, and thus the lessons will be brought home in an effective way.

In our research work, because we have the means and the men, we want to make the benefactions of Macdonald College for rural communities extend as widely as possible. We carry on the work of the college in three departments or schools. In connection with the school of agriculture we have the research and illustration departments of which I have spoken. Then we have household science with research, and instruction for the homes of the people. That branch treats of the three prime necessities of life—food, raiment, and housing. It is just as important that the woman should be educated for her sphere of management as the man for his. In the school for teachers the instruction and training are for teachers preparing for city and rural schools. It is important that the rural school and its teacher should stand in with those two other activities—the occupations and the homes of the parents—and that the children should be thoroly trained toward ability for, as well as an understanding of, what will be required of them in the fields and in the homes. The threefold character of the college fits it to train leaders for rural communities.

The work carried on at Macdonald College consists of instruction in the three fundamental, mothering occupations which nurture the race: first, farming, whereby man becomes a partner with the Almighty and, thru co-operation with nature, obtains the benefactions of Providence for food, clothing, and shelter; secondly, the making of homes; thirdly, the teaching of children.

At Macdonald College the education of leaders for those fields of human endeavor is being carried on in close co-relation. In times gone by the segregation of teachers-in-training, in institutions devoted exclusively to their use, had been no better for them than the isolated training of leaders for rural life in colleges of agriculture had been for their students. Until recently, neither of

them had much in their courses which identified formal or liberal education with the activities of the homes. The substantial advantages of co-education, in this larger sense, are already evident. The homes, the schools, and the farms are finding the common center from which radiate plans and labors: "A little child shall lead them."

